United States Patent and Trademark Office

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,818	01/25/2002	Yoshiki Fukui	111795	5770

25944	7590	03/29/2004	

OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER
LEE, HWA C

ART UNIT	PAPER NUMBER
2672	6

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

		Application No.	Applicant(s)
Office Action Summary		10/054,818	FUKUI ET AL.
		Examiner	Art Unit
		Hwa C Lee	2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-20* is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1-20* is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on *25 January 2002* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☒ All   b) ☐ Some *   c) ☐ None of:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. _____.
    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
       application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date <u>5</u>.
4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

> 1.   Determining the scope and contents of the prior art.
> 2.   Ascertaining the differences between the prior art and the claims at issue.
> 3.   Resolving the level of ordinary skill in the pertinent art.
> 4.   Considering objective evidence present in the application indicating
>   obviousness or nonobviousness.

3.   Claims 1-6, 9-10, and 13-20 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Lehikoinen et al., U.S. Patent Application Publication No.,

2002/0077060 in view of Glorikian, U.S. Patent No., 6,343,317.

4.   In regards to claim 1, Lehikoinen et al. discloses the following:

A service providing system for associating service with a virtual object, for

disposing the virtual object in a virtual space associated with an actual space,

and for providing service corresponding to the virtual object according to a

positional relationship between a movable mobile member and the virtual object,

comprising: (Paragraph [0013])

- ***The virtual object in a virtual space associated with an actual space*** as disclosed by the applicant is specifically an imaginary boundary, wherein the presence of a mobile object within said virtual object (imaginary boundary) triggers a service providing system to provide service associated with said virtual object (imaginary boundary) to the mobile object. Thus, an operating range of a short range communication beacon for effecting wireless communication between the mobile station and the beacon is specifically a ***virtual object in a virtual space associated with an actual space***. In addition, providing location dependent services when the mobile station (mobile member) is within said operating range is specifically ***providing service corresponding to a the virtual object according to a positional relationship between a movable mobile member and the virtual object***. Further, in order to provide service corresponding to the virtual object, the service providing system must ***associate service with a virtual object***.

a storage device that associates object information related to a shape and location of the virtual object with service information specifying a service content, and that stores the object and service information;

- Lehikoinen et al. discloses a memory, which is specifically ***a storage device***, in the mobile station, which specifically is ***a mobile member*** (Paragraph [0016] and Paragraph [0032]). Said memory stores the location information, which specifically relates to the operating range of the short range communication beacon (virtual object).

- The short range communication beacon comprises a CPU (FIG. 3, No. 302), a plurality of transceivers (FIG. 3, Nos. 308, 310, and 312), an memory (FIG. 3, No. 304), and storage area (FIG. 3, No. 306). Said memory and storage area store application software and data to be communicated to the intended recipients (mobile members). Each beacon is operable in the corresponding region (FIG. 5, No. 5), and the transmission range is described as a circular geographic area based on the radius of said communication range (Paragraph [0031]). Thus, when the location information describing the operating range of the beacon is stored, the shape of the operating range (a circular region) must also be stored. Said location and circular shape specifically is the location and shape of the virtual object. Further, the location based information, which specifically is a *service information specifying a service content*, is stored in said beacons (Paragraph [0035]). The service content comprises train schedule. Further, the operating range of the beacon is embedded in the Bluetooth system, and thus is stored in the beacon.

5.   Lehikoinen et al. discloses a system of determining if the mobile station is located within the operating range of the short range communication beacon (Paragraph [0013]), which specifically is obtaining the *location information used for identifying a location of the mobile member*, but does not explicitly disclose the limitation of *a location-information acquisition device*.

6.   Glorikian discloses the said limitation of *location-information acquisition device*.

- Glorikian discloses a system for delivering a position-related information when a portable computerized appliance is positioned at a certain location (Col. 2, lines 7-21). Said position-related information specifically is *service information corresponding to a virtual object*, since specific location of the computerized appliance triggers service information corresponding to said specific location.

- Glorikian also discloses a position-determining system comprising a GPS receiver at the computerized appliance (Col. 2, lines 21-26 and FIG. 2, No. 57), which specifically is *a location-information acquisition device*. In addition, a data repository (*a storage device*) stores information related to the position of the computerized appliance.

7.   Lehikoinen et al. and Glorikian in combination disclose the following:

wherein, when it is determined according to the location information obtained by the location-information acquisition device and the object information stored in the storage device that the mobile member is disposed in an inside area of the virtual object identified by the shape and location of the virtual object, service corresponding to the virtual object is provided according to the service information stored in the storage device

- As applied above, Lehikoinen et al. discloses the limitation of determining If the mobile station (mobile member) is located within the operating range of the short range communication beacon, and if so, the location-dependent service information is transmitted from the beacon to the mobile station (Paragraph [0013], lines 4-8; Paragraph [0029]).

- Glorikian discloses the limitation of a *location-information acquisition device* as applied above.

8.   It would have been obvious to one of ordinary skill in the art to take the teachings of Lehikoinen et al. and to add from Glorikian the GPS receiver in order to determine the location of the mobile member. Once, the location of the mobile member is determined, the corresponding service information can be transmitted to the mobile member. GPS is a standard positioning device used in a plurality of a mobile devices, and it would have been obvious to add the GPS unit to the mobile station (PDA or mobile phone) as disclosed by Lehikoinen et al. to perform the said location determination function. In addition, all references are directed to a system of providing location-dependent service information to a mobile device.

9.   In regards to claim 2, the same basis and rationale for claim rejection as applied to claim 1 are applied. In addition, Lehikoinen et al. and Glorikian in combination disclose the following:

A service providing system according to claim 1, the mobile member and a management terminal that manages the virtual object being connected in a communication-allowed manner;

- As applied to claim 1 above, Lehikoinen et al. discloses a short range communication beacon, which is specifically *a management terminal*. The beacon is connected to the mobile member by communicating with each other (Paragraph [0013], lines 4-17). Said beacon manages the operating range of the beacon and thus the virtual object. The beacon can change the range from 10

meters for a normal power mode to 300 meters for a high power mode

(Paragraph [0030, lines 6-12]) when using the Bluetooth technology.

the mobile member includes the location-information acquisition device (From

Glorikian: Col. 2, lines 21-26 and FIG. 2, No. 57)*,*

and sends the location information obtained by the location-information

acquisition device to the management terminal (From Lehikoinen et al.: Paragraph

[0016], line 8–11 and Paragraph [0013], lines 11-17)*;*

and the management terminal having the storage device (From Lehikoinen et al.:

FIG. 3, No. 304 and FIG. 3, No. 306)*,*

and when the management terminal receives the location information, the

management terminal determines, according to the received location information

and the object information stored in the storage device, whether the mobile

member is disposed in the inside area of the virtual object identified by the shape

and location of the virtual object (From Lehikoinen et al.: Paragraph [0013] and

(Paragraph [0031]).

10.   In regards to claim 3, the same basis and rationale for claim rejection as applied

to claims 1 and 2 are applied to reject the following:

A service providing system according to claim 1, the mobile member and a

management terminal that manages the virtual object being connected in a

communication-allowed manner; the management terminal includes the storage

device, and sends the object information stored in the storage device to the

mobile member; and the mobile member includes the location-information

acquisition device, and when the mobile member receives the object information,

the mobile member determines, according to the location information obtained by

the location-information acquisition device and the received object information

whether the mobile member is disposed in the inside area of the virtual object

identified by the shape and location of the virtual object.

- Lehikoinen et al. discloses a plurality of short range communication beacons (*management terminals*) as applied to claims 1-2 above. Said beacons are in communication with the mobile station (*mobile member*) only when the mobile station is within operating range of the beacons. Thus, the beacon must send the data pertaining to the operating range (*object information*) to the mobile station. When the mobile station is determined to be inside of the operating range (*virtual object*), the determination must be performed based on the shape and location of the operating range.

11. In regards to claim 4, the same basis and rationale for claim rejection as applied to claims 1-3 are applied.

A service providing system according to one of claim 2, wherein, when the result

of the determination indicates that the mobile member is disposed in the inside

area of the virtual object identified by the shape and location of the virtual object,

the management terminal provides service corresponding to the virtual object

based on the service information stored in the storage device.

12. In regards to claim 5, the same basis and rationale for claim rejection as applied to claim 4 are applied.

A service providing system according to one of claim 2, the management terminal sending the service information stored in the storage device to the mobile member, and when the result of the determination indicates that the mobile member is disposed in the inside area of the virtual object identified by the shape and location of the virtual object, the mobile member provides service corresponding to the virtual object based on the received service information.

- The mobile station provides the service sent by the management terminal to the user based on the received service information, such as the train schedule.

13.   In regards to claim 6, the same basis and rationale for claim rejection as applied to claims 1-2 are applied.

A service providing system according to one of claim 2, the management terminal further comprising: an input that performs an input related to at least one of generation, deletion, and update of the object information; and an object-information processing device that generates, deletes, or updates the object information according to the content of the input performed by the input device.

- As applied to claim 1 above, Lehikoinen et al. discloses a method of modifying the operating range of the beacon, wherein the operating range is interchangeable between 10 meter radius (normal power) and 300 meter radious (high power). Since the operating range represents the location and shape of the virtual object, modifying the operating range specifically is *updating* the object information. In order to switch between normal power and high power, a switch device or other user input device must allow the user to switch between low

power and high power, which specifically is *an input that performs an input related to at least one of generating, deleting, and update of the object information*. In addition, activating and deactivating the short range transceiver or the beacon itself must comprise an input to activate or deactivate the short range transceiver, which specifically is an *input device* for *generating and deleting object information*.

- Also as applied to claim 1 above, Lehikoinen et al. discloses a CPU integrated within the beacon for performing data processing and executing the operating software, which specifically comprises processing *object-information* and *generates, deletes, or updates the object information according to the content of the input performed by the input device.*

14.   In regards to claim 9, the same basis and rationale for claim rejection as applied to claims 4-5 are applied. Lehikoinen et al. discloses providing service information comprising maps and advertisements (Paragraph [0040], lines 1-6), and Glorikian discloses providing service information comprising historical interests (Col. 5, lines 37-41 and Col. 10, lines 10-62), which specifically are *service information specifying a content of service in which notice information related to at least one of a notice and guidance information related to a guidance is provided for the mobile member.*

15.   In regards to claim 10, the same basis and rationale for claim rejection as applied to claims 1-5 are applied. Lehikoinen et al. discloses a mobile station comprising a PDA (Paragraph [0029], lines 1-5), and Glorikian discloses a mobile unit comprising portable

handheld computers (Col. 3, lines 31-38), which specifically are *mobile member being a portable terminal*.

16.   In regards to claim 13, the same basis and rationale for claim rejection as applied to claim 2 are applied.

17.   In regards to claim 14, the same basis and rationale for claim rejection as applied to claims 1-3 are applied.

18.   In regards to claim 15, the same basis and rationale for claim rejection as applied to claim 1 are applied. The application software stored in the memory storage are devices as applied to claim 1 above are specifically *a service providing program*.

19.   In regards to claim 16, the same basis and rationale for claim rejection as applied to claims 11 and 15 are applied.

20.   In regards to claim 17, the same basis and rationale for claim rejection as applied to claims 12 and 16 are applied.

21.   In regards to claim 18, the same basis and rationale for claim rejection as applied to claim 15 are applied.

22.   In regards to claim 19, the same basis and rationale for claim rejection as applied to claim 16 are applied.

23.   In regards to claim 20, the same basis and rationale for claim rejection as applied to claim 17 are applied.

24.   Claims 7-8 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lehikoinen et al. in view of Glorikian as applied to claims 1-6, 9-10, and 13-20 above, and further in view of Stewart, U.S. Patent No., 6,697,018.

25.   In regards to claim 7, Lehikoinen et al. and Glorikian disclose the all limitation of

claims 4-5 as applied above, but do not disclose *the service information being*

operation information specifying a content of an operation of the mobile member

or another apparatus. Stewart, however, discloses the said limitation.

- Stewart discloses a method and apparatus for providing service information to a
  mobile unit based on the proximity of the device to a service access point (Col. 2,
  lines 56-65). When the presence of the mobile device is detected at proximity of
  the service access point, the service access point sends a print request from the
  mobile unit to a printer or an E-mail message to the user's rental car agency (Col.
  3, lines 6-17). Said print request and E-mail messaging specifically are *service*
  information being operation information for operating the printer and the E-
  mail program (*another apparatus*).

26.   It would have been obvious to one of ordinary skill in the art to take the teachings

of Lehikoinen et al. and Glorikian, and to add from Stewart the method and apparatus of

providing operation information for operating a printer or the E-mail program. Said

operation information is used to operate the printer or the E-mail program when the

mobile unit is determined to be located within the virtual object as applied to claims 4-5

above. Detection of the mobile unit by the service access point as disclosed by Stewart

is an analogous operation to the detection of the mobile station as disclosed by

Lehikoinen et al. Said operation of the printer and the E-mail program allows a busy

traveler to print a document or send an E-mail while en route to a destination. Such

practice can be used to pre-register for a hotel or a rental car in order to save the user

from standing in line and have the hotel room or the rental car ready for the user to use when the user arrives at the destination. In addition, all references are directed to providing location-dependent service information to a mobile unit/device.

27.   In regards to claim 8, the same basis and rationale for claim rejection as applied to claims 1-5 and 7 are applied. Stewart discloses that *the service information specifying a content of service in which media information related to at least one of characters, images, and video is provided for the mobile member* (Col. 4, lines 13-15).

28.   It would have been obvious to one of ordinary skill in the art to take the teachings of Lehikoinen et al. and Glorikian, and to add from Stewart the method and apparatus of providing service information comprising at least one of *characters, images, and video* in order to provide guiding or notice information to the user. The user maybe a traveler in need of a direction from a map and/or hotel and rental car information. Also, a user maybe in a museum, and when the user (and user's mobile device) is determined to be located inside of an imaginary boundary in front of a specific art work, video information describing the art work can be provided to the user's mobile device. In addition, all references are directed to providing location-dependent service information to a mobile unit/device.

29.   In regards to claim 11, the same basis and rationale for claim rejection as applied to claims 1-5 and 7 are applied. Determining that the mobile station is located within the operating range of the beacon specifically is *determining according to the object*

information stored in the storage device that the positional relationship between

the mobile member and the virtual object satisfies a predetermined condition.

30.   In regards to claim 12, the same basis and rationale for claim rejection as applied

to claims 6 and 11 are applied.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Hwa C Lee whose telephone number is 703-305-8987.

The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Joseph Mancuso can be reached on 703-305-3885. The fax phone number

for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

                                                    Hwa C Lee
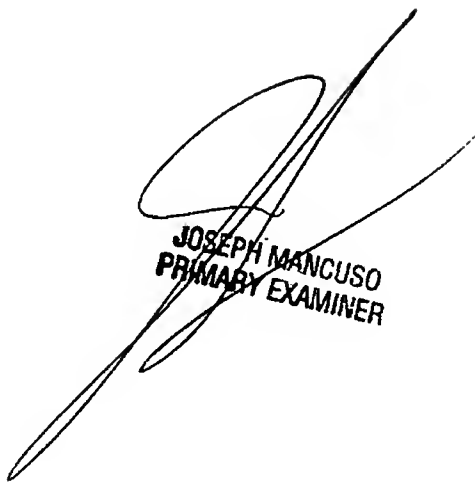   Examiner
                                                    Art Unit 2672

HCL

03/18/04

JOSEPH MANCUSO
PRIMARY EXAMINER